

## Harvest and Postharvest Needs of Fall/Winter Storage Crops

	<b>Harvest</b>	<b>Curing</b>	<b>Storage</b>	<b>Notes</b>	<b>Ethylene Sensitivity*</b>
<b>Potato</b>	Harvest when tuber temperature is 55-60°F, up to 62-65°F if storage is refrigerated. Avoid harvesting at tuber temperatures <45°F, which increases bruising and wounding.	Cure at 55-60F and 95% RH for 2-3 weeks to suberize wounds & lower respiration rate. Maintain adequate ventilation. Grade to remove diseased tubers before storing.	Lower temperature gradually to 40°F for tablestock or seed. Store at 50°F for chip stock varieties. Maintain RH at 90-95%. Store 5-8 months.	Curing and storage environments must be dark to prevent greening. Colder T convert starch to sugar.	LOW
<b>Sweetpotato</b>	Harvest when soil temperatures fall consistently below 65°F, before first frost, or when tubers are adequately sized, whichever comes first. Minimize wounding and bruising during harvest.	Cure at 80-86°F and 85-95% RH for 4 to 7 days. An empty greenhouse works well, as long as temperatures do not fall below 50F.	Store at 55-60°F at 60-75% RH. Well-cured roots can store for up to a year in optimal conditions.	Starches in roots convert to sugars for the first 30 days post harvest; wait until 3 weeks after harvest for best flavor. Avoid chilling injury by keeping roots above 50°F. Chilling injury promotes root decay and decreases storage potential.	MODERATE (causes discoloration)
<b>Winter Squash</b>	Fruit harvested for storage should be mature (45-50 days after pollination). Harvest promptly to avoid risk of sunscald, disease, & insect injury. Handle carefully to prevent wounds. For butternut, remove stem to decrease wounding in bins; this may be useful for other varieties as well.	Squash should be kept above 50F to prevent chilling injury. Starches in squash convert to sugars after harvest; curing at 70-80F for a week will accelerate this process. The flavor of some squashes (butternut, kabocha types) benefits from storage for 30-60 days after harvest	Store at 55-60°F and 50-70% RH. Storage potential varies with variety, from 2-6 months.	Avoid chilling injury in field or storage, which occurs when temperatures are below 50°F. Injury increases as T decreases and/or length of chilling time increases. Decay accelerates after chilling. High temperatures decrease flesh quality, and high RH promotes decay.	MODERATE (causes discoloration)
<b>Onion</b>	Onions are ready for harvest when at least half the leaves are dead. Harvest when the weather is dry; harvesting after a rainfall or when the humidity is high increases susceptibility to post-harvest disease.	Cure in warm (68-86°F) and dry (70% RH) conditions with good air flow, until the neck is completely dry and tight. Top bulbs, leaving 2-3 inches of stem.	Store at 32°F and 65-70% RH. Avoid condensation by cooling gradually and maintaining steady temperature. Storage potential depends on variety.	As onions mature, their dry matter content and pungency increase. Onions produced from seeds store longer than those from sets. High temperatures increase sprouting, high RH stimulates root growth, and the combination increases likelihood of rotting.	LOW

<b>Garlic</b>	Harvest when leaves begin to turn yellow, but when about 60% are still green. Cloves should fill the wrappers.	Cure for 10-14 days in a warm, dry, well ventilated area until the outer skins are dry and crispy, the neck is constricted and the center of the cut stem is hard.	Store at 32°F and 65-70% RH. Seed garlic should be stored at 50F. Garlic should keep for 6 to 7 months at 32°F.	High temperatures (>65F) cause dehydration, intermediate temperatures (40-65F) promote sprouting, and high RH promotes root growth and molding.	LOW
<b>Carrot</b>	Fall-dug carrots should be harvested before shoulders freeze, but when soil and root temperatures are cool. Trim tops to 1/2 inch.	Carrots are sensitive to dessication. Should be cooled to 32°F within 2 days after harvest. Low RH causes shriveling and rubberiness.	Store carrots at 32°F and 98-100% RH. Can be stored 7-9 months.	May be stored washed or unwashed. Washing immediately after harvest may reduce disease incidence in storage. Storing with ethylene-producers (like apples), and wounding and bruising during washing, can cause bitterness.	HIGH (causes bitterness)
<b>Parsnip</b>	Parsnips can be left in the ground through the winter, or can be dug in the fall as for carrots.	Remove field heat before storage.	Store at 32°F and 95% RH with greens removed. Parsnips will keep for 4-6 months at optimum conditions.	Starches in parsnip roots convert to sugars at cold temperatures. Early fall dug parsnips can be induced to sweeten with a short (2-3 weeks) cold storage treatment.	HIGH (causes bitterness)
<b>Beet, Winter Radish, Turnip &amp; Rutabaga</b>	Harvest after roots are mature but before the ground freezes. More tolerant of light freezing than carrots.	Remove field heat before storage.	Store at 32°F and 95% RH with greens removed. Roots vary in storage life.	Low humidity causes shriveling and weight loss, and shortens storage life.	LOW
<b>Cabbage</b>	Harvest before the top cover leaves begin to lose their bright green color. Cabbage which has been subjected to frosts usually will not store well and should be marketed first.	Loose leaves should be trimmed away; only 3 to 6 tight wrapper leaves should be left on the head. Cool the cabbage as quickly as possible, maintain at least 90% RH.	Store cabbage at 32°F and 98-100% RH. Can last 4-6 months in optimum conditions.	Cabbage and other Brassicas freeze at 30F, and storability starts to decrease at >34F. Presence of light in storage can decrease leaf yellowing during storage.	HIGH (promotes leaf yellowing, wilting, and abscission)

\*Crops that produce significant amounts of ethylene during storage include: apple, pear, peach, plum, cantelope, tomato, plus several tropical fruits